

I. PRELIMINARY CONCERNS

1. Environmental restoration goals. While acknowledging the substantial efforts by the Program staff and stakeholders on ecosystem restoration goals and measurement, we believe much work remains to be done in clarifying ecosystem restoration goals. We have attached a memorandum which provides some detailed suggestions on how to frame habitat objectives related to aquatic species. A similar product is needed for the wetland habitats and species of the Bay-Delta. Working with the Program to articulate species and habitat objectives and integrate these measures at an ecosystem restoration level will be among EPA's highest priorities in the upcoming months.

2. Framework for Analysis: Component programs. In recent weeks, Program staff have been discussing the use of a "component program" framework for water use efficiency, water quality, ecosystem restoration, and system vulnerability. Our understanding is that the goals for each of the components will remain constant - and ambitious - across all alternatives. Alternatives would be distinguished chiefly by differences in the water conveyance and storage features. While the component program idea has merit, we would like to reiterate our understanding and concerns regarding this framework. We believe the Program can proceed with this analytic framework, provided the following issues can be satisfactorily addressed:

- Common goals, differing implementation

The Bay/Delta Program has recognized that the water quality, ecosystem restoration, and water use efficiency actions that correspond to each conveyance option will vary. For example, achieving a "common level of improvement" in water quality for the delta will require different action under an isolated facility alternative than under a through-Delta option. We believe that the differences between these actions may not be just minor adjustments and may affect the comparative evaluation of the alternatives. Similarly, in any component program for "ecosystem restoration," we would expect that the species and habitat characteristics of that restoration, targeted locations, and costs may differ appreciably among alternatives.

- Applicability of the common component concept to water use efficiency

The cost and effectiveness of the features considered "variable" across alternatives-- conveyance and storage-- will influence the degree to which actions classed as "water use efficiency" are cost effective and attractive to water users. The Program should consider developing a way of representing trade-offs between the full range of water supply reliability measures.

- Need to analyze the economics of common goals for all components

While the framework of common goals may be a useful starting point, we strongly encourage the Bay/Delta program to remain open to a continual questioning of economically and socially optimal levels between options. While these "common major improvements" appear at the moment desirable, the cost figures have not been

Caffrey, State Water Resources Control Board, September 25, 1995), changes in the facilities or permits will alter the baseline context for the standards and will require reevaluation of the standards.

Given this clear interrelationship between the physical or operational configuration of the Delta and the adequacy of the water quality standards to protect the designated uses, EPA cautions the Program about making certain assumptions in developing its alternatives. Specifically, it would not be correct to assume that meeting the existing nominal standards will continue to provide adequate protection for the aquatic resources if an alternative includes substantial changes to the physical or operational conditions in the system. As each alternative is refined, protection of the designated uses will have to be reconsidered as part of the overall investigation of environmental effects.

5. Existing conditions. Characterization of "existing conditions" is important to set a benchmark for measuring future changes in the environment associated with Program alternatives. Where a "snapshot" approach would not capture the variability of conditions (characteristic of certain aquatic species, for example), a longer term perspective will be necessary. For the purpose of documenting the "existing" Bay/Delta hydrodynamics, we believe it is appropriate to refer to the conditions resulting from the configuration of facilities and operations on which EPA approval of the State water quality objectives was based; these conditions should be modeled under a variety of hydrological conditions. Further, the Program EIS should document this configuration of facilities and operations as part of its description of the benchmark existing conditions.

6. No action (without project) alternative The Program staff have released a draft discussion paper on developing a "no action" (without Program) alternative and cumulative actions list. We are in general agreement with the proposed approach: To simplify analyses, we support a conservative application of criteria for no action, excluding actions for which final environmental documentation and implementation mechanisms have not been concluded. For the Program, which comprises not only new projects but changes in ongoing activities, the no action alternative also serves an important role in documenting current management-- that is, existing policies, programs, and other activities of the CALFED agencies which would continue absent the Bay-Delta Program-- and characterizing future conditions resulting from the impacts of ongoing management in combination with other actions.

7. Phasing and "Core Elements". Under NEPA, an agency should not undertake actions concerning the Program prior to completion of the Program Record of Decision if there would be adverse environmental impacts or if such action would limit the choice of reasonable alternatives. In the case of a program environmental impact statement such as this one, certain interim actions relating to the program may be undertaken if they have independent justification, have adequate environmental review, and would not prejudice the ultimate program decision. While we fully support prompt implementation of appropriate interim and core activities, we are also concerned that immediate actions not foreclose viable long-term solutions. We expect to work closely with the other CALFED agencies to evaluate applicability of these criteria.

II. EPA'S EVALUATION OF ALTERNATIVES - A SUMMARY

The central task in completing this initial phase of the Program is defining a range of alternatives-- probably no more than five--to carry forward into Phase II for detailed design, implementation planning, and impact analysis. At the onset of public scoping, the CALFED agencies tendered ten draft alternatives, elements of which may be recombined, changed, or eliminated, if appropriate. NEPA and its associated regulations direct us to consider a full range of reasonable alternatives, which is to say a range of alternatives expected to adequately meet Program objectives (captured in a purpose and need statement) and which are technically and economically feasible.

The Program has also developed a set of "solution principles" which define tests for a "good" alternative, such as equitable sharing of benefits, flexibility, and durability. While we fully support using these principles to assess performance of an alternative and acceptability from a public policy perspective, this assessment should not be confused with screening for reasonableness under NEPA. The adequacy of the Program will ultimately be evaluated by reference to the NEPA requirements, not by reference to the solution principles. For that reason, EPA's discussion of the alternatives below focuses primarily on whether the alternatives are reasonable given the stated Program objectives.

Using the criteria of performance of Program objectives and economic and technological feasibility, we believe the "water conveyance and storage" solutions posed in the ten draft alternatives fall into three classes. Some clearly appear reasonable and should be carried forward into Phase II; others can be eliminated now on the basis of cost (including likely magnitude of impacts which would require mitigation), technical difficulties, and/or failing to clearly relate to Program objectives. A third class of solutions requires additional information before a decision regarding rejection or retention can be supported.

Alternatives to Retain for Phase II

- * **An alternative based on the current system of facilities, emphasizing an optimum combination of water use efficiency and measures to effect reallocation of developed supplies among users.**

The "existing system" option which we envision should be significantly changed from preliminary Alternative A outlined in the Program's April draft. Two major reworkings are necessary before undertaking modeling: (1) focusing on water reallocation rather than land retirement, per se, and (2) deciding on the amount of reductions in Delta diversions on the basis of ecosystem restoration, economics, and other variables rather than prescribing target levels of reductions.

Further, we question relying on the high level of land retirement assumed in Alternative A to accomplish the "demand management" and water reallocation needed for an existing system option. There is much evidence that other methods of reallocation (market mechanisms and other incentives) can be more economically efficient, allow land to stay in production, and avoid the rural community impacts that may accompany extensive land retirement. We suggest that the land retirement component be scaled back significantly and

focused on water quality problems of selenium and salt loading and/or drainage damaged lands.

Finally, the Program should treat the amount of export reductions as an investigation rather than assume specified levels. We note that Alternative A, alone among the alternatives, has total (prescribed) water supply numbers associated with it. Ultimately, it will be important to provide water supply yield or reliability information for all alternatives, but we strongly recommend that this be done through analysis of performance. In addition, given that various ecosystem restoration goals affecting reductions in Delta pumping have not yet been fully developed, we cannot agree that a three million acre foot (maf) per year reduction is appropriate even as a modeling starting point. We would instead like to discuss the restoration goals and then estimate the water supply consistent with these goals. We look forward to working with you on these options.

*** An alternative (or alternatives) addressing water management by means of modified through-Delta conveyance and moderate additions to storage.**

We believe that the through-Delta conveyance alternative constitutes a reasonable approach to meeting the project purposes, and believe it should be reviewed in the next phase.

Generally, we believe moderate levels of storage "above," "within," and "below" the Delta should be considered. We have attached a memorandum with additional discussion about ways to improve the analysis and the alternative itself.

*** An alternative (or alternatives) incorporating "dual" Delta conveyance (through and isolated facilities) with moderate additions to storage.**

Again, we believe that moderate levels of storage "above," "within," and "below" the Delta should be considered in this alternative.

Alternatives to Eliminate as Unreasonable

We recommend eliminating from further consideration two conveyance and storage alternatives: Alternative G (East Side Foothills Conveyance) and Alternative I (West Side Conveyance). Neither of these alternatives meets the "reasonableness" criteria set forth in NEPA and each addresses issues outside the purpose and need.

Our principal concern with Alternative G (East Side Foothills Conveyance) is the inappropriate scope of its water supply solution. The rationale given for locating the conveyance in the foothills is to facilitate surface water supply, groundwater recharge, and ground water banking and water supply for users in the region immediately east of the Delta, the Bay area, and recipients of exchange water on the San Joaquin River. We believe that these are water supply reliability and water quality goals well outside the Program's Bay/Delta-focused purpose and need; this alternative is likely to exacerbate the problem of reliability of water supplies from the Bay/Delta system by further committing those scarce supplies to areas in search of additional water. We also question whether the level of diversions anticipated from the Sacramento and Feather systems is feasible in light of needed

flow protection. If the scale of diversions is limited to adequately protect flows, it is not clear whether the new conveyance facility would be economic. Finally, we are also concerned that this proposal would have unreasonable impacts that would be very difficult to adequately mitigate.

Alternative I (West Side Conveyance) should be eliminated from further consideration on economic grounds. The initial cost estimates for this option were \$12-24 billion, whereas no other alternative had estimated cost in excess of approximately \$4-11 billion. We note that cost estimates have as yet been limited to capital costs; mitigating impacts at storage sites will add to the expense. Also, the feasibility of diversions on this scale (while adequately protecting instream and Bay/Delta flows) has not been demonstrated.

Alternatives About Which EPA is Uncertain

Significant questions of technical or economic feasibility of implementing an alternative, or infeasibility of adequately mitigating impacts of an alternative could be grounds for eliminating that option, particularly if there are other alternatives which are expected to provide similar water supply benefits without technical problems of this magnitude. Further, if substantial uncertainty remains regarding whether an alternative is practical from an economic or technical standpoint, or could adequately satisfy the Program objectives, we would also recommend dropping that alternative.

In the case of two alternatives, Alternative H (Chain of Lakes) and Alternative J (isolated East Side conveyance), EPA recommends that the Program immediately develop documentation on certain issues to support a decision regarding including or excluding these water management solutions. The basis for these decisions should be well documented before proceeding into Phase II.

For Chain of Lakes, additional information is needed on system vulnerability (vulnerability in the event of flood conditions, seismic safety) and drinking water quality of the shallow storage areas.

In the case of Alternative J (isolated East Side conveyance), additional information is needed on feasibility of environmental protection measures and total cost (including mitigation measures). There is need to examine impacts of this proposal with respect to Delta inflow, in Delta water quality, and diversion impacts on fish (screening). We question whether fish screen are a proven option on a diversion of this size. Approach velocities would be so high that the screen would have to be of a substantially different design than is conventionally used.

III. ADDITIONAL COMMENTS ON EXISTING ALTERNATIVES

In-delta storage. A number of alternatives would provide for storage of water in-Delta for the environment. We have some concerns regarding potential adverse impacts of in-Delta storage and suggest that additional analysis should consider whether benefits attributed to this concept could not be better attained through facilities located outside the Delta. These issues should be given attention as the alternatives are further refined.

There are several uses of water stored on Delta islands which deserve additional discussion:

- * To increase Delta outflow, or to substitute for releases from upstream reservoirs to meet X2 requirements. However, releasing in-Delta flows may not be as effective as water stored and released upstream. While substitution of in-Delta releases may improve carryover storage in upstream reservoirs, it may not be as beneficial for aquatic resources as releases into rivers (for instance, synergistic benefits to outmigrants).
- * To supply the export pumps during periods such as the spring, when currently through-Delta exports are constrained. However, levels of entrainment may still be significant, although reduced when compared with moving water across the Delta. Furthermore, there will be some impacts to fish from diversions onto storage islands in the Delta.

Feasibility of supply proposals which "sculpt the hydrograph": There should be more specific consideration of instream flow needs, to determine feasibility of proposals which rely on diversion and storage of water upstream (whether on a very large scale, such as G & I, or on a more modest scale, such as B & C). On many streams the existing minimum flow requirements should not be presumed adequate to protect fish. We are particularly skeptical of the premise that there is sufficient water available to render storage on the scale of 6-8 million acre feet (Alternative I) economically viable.

Land retirement: The Program needs to more clearly define objectives of land retirement. At present, there appear to be dual (and not necessarily complementary) purposes of providing a means of reallocating water supply from agriculture to urban and/or environmental uses, and of improving water quality. These objectives will influence location, scale, and cost of land retirement. For example, if the intent is to take "marginally productive land" out of production and transfer the water to other uses, priority areas might be in the Tulare Basin. While retirement of lands in the Tulare Basin may yield water supply benefits, it won't alleviate problems of San Joaquin River and Delta water quality. If extensive land retirement is targeted in the San Joaquin Valley, there may be special concerns for habitat and San Joaquin River flow impacts, as well as beneficial effects on water quality.